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Cumulative Impacts and Community Vulnerability

California Department of Toxic Substances Control

Diamond Bar, CA

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Presentation Outline

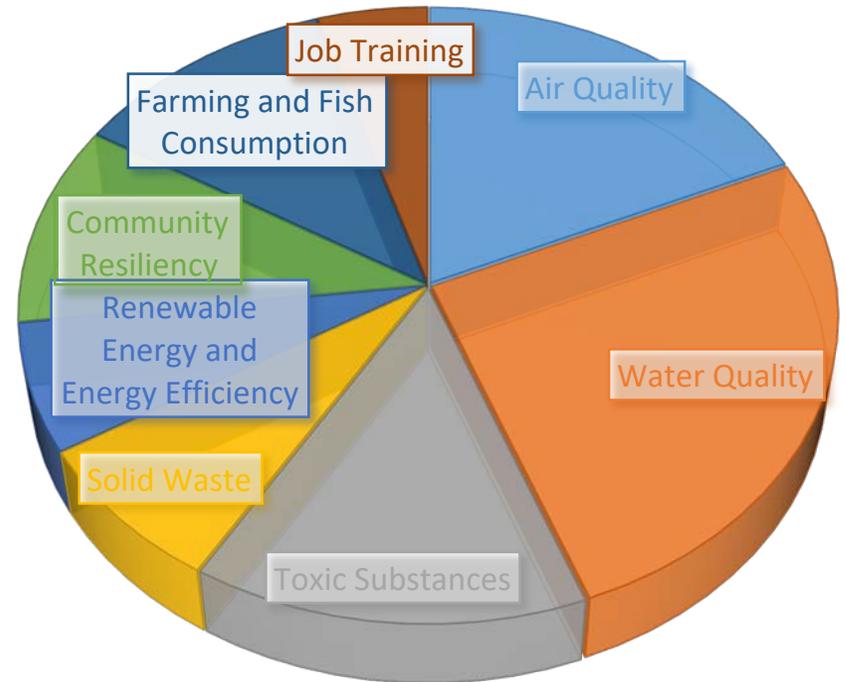
- EPA's Environmental Justice Program
- Cumulative Impacts and Community Vulnerability
- EJSCREEN: National EJ Mapping and Screening Tool
- C-FERST: Community-Focused Environmental Risk Screening Tool



EPA's Environmental Justice Program

- Support and engage communities
- Build partnerships with federal agencies, states, tribes and local governments as well as CBOs, academia, business and industry, NGOs
- Achieve measurable environmental outcomes
- Integrate EJ in EPA programs, policies and activities

FOCUS OF GRANT PROJECTS 2013 - 2016



Since 1993, more than \$24 million in EJ small grants and collaborative problem-solving grants awarded through over 1400 community-based projects



Communities are Seeing Improvement...

Imperial Valley, Imperial County, CA, US-Mexico Border Region
(Population: 174,528)

Programmatic Authority: Air Quality and Asthma

Partners: Comité Cívico del Valle (CCV), California Environmental Health Tracking Program (CEHTP), CA Department of Toxic Substances Control, Imperial CUPA, Imperial County Air Pollution Control District (APCD), Imperial Valley Child Asthma Program (IVCAP), Brawley Union High School (BUHS)



- Sustainable financing strategy for in-home asthma providers.
- 214 home visits to families of children with asthma.
- Made neighborhood-level air monitoring data more useful through loaned met stations.
- Trained local partner on EPA's Air Sensor Toolbox.
- Funded California Air Resources Board to monitor air toxics from Salton Sea windblown dust.
- Provided diesel emissions reduction workshops and co-sponsored the 2015 and 2016 Environmental Health Leadership Summit.
- Translated Air Quality Flag Program resources to Spanish and created bilingual website.

National EJ Challenges and Measures of Success

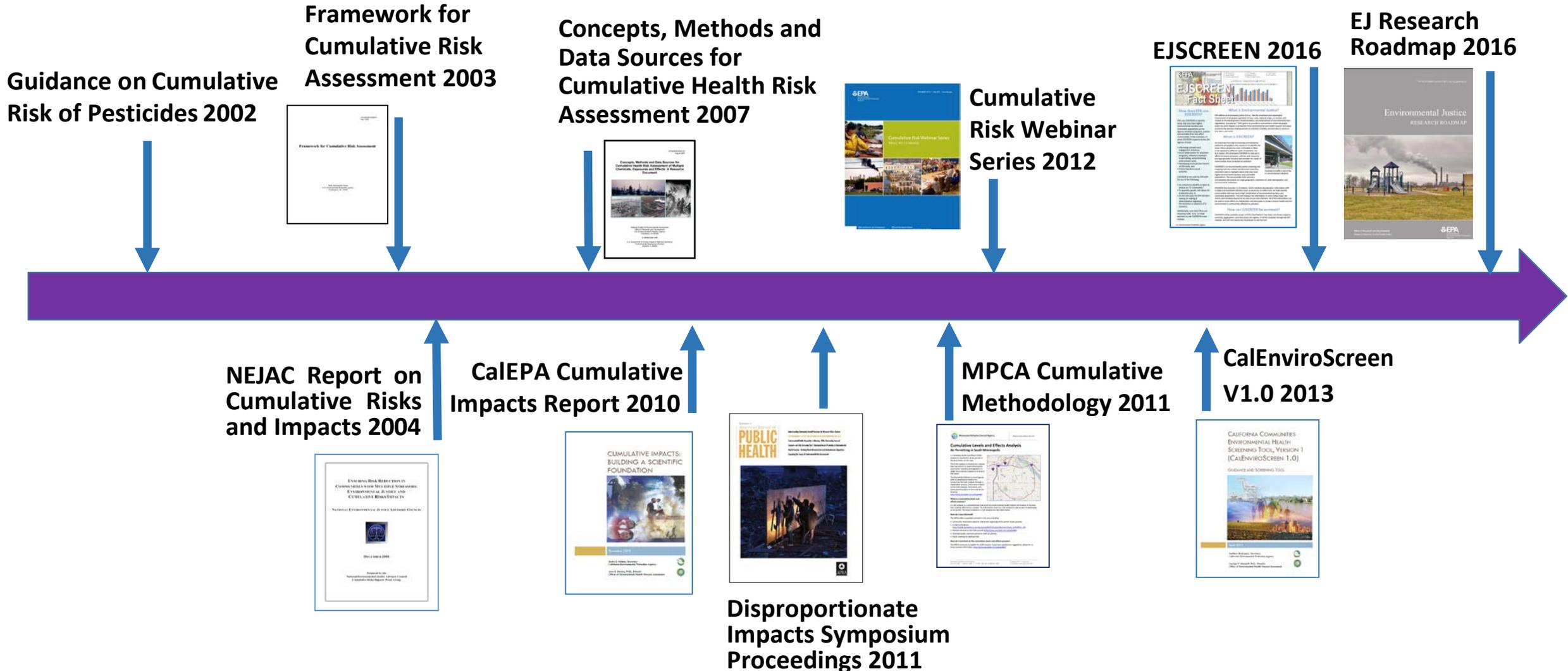
Challenge	Measure of Success
Blood Lead Level Disparities	Reduce the percent difference in the geometric mean blood lead levels between low income and non-low-income children. Baseline difference is 28.4%
Small Water Systems	Reduce the number and % of small community water systems and non-transient non-community water systems with repeat health violations of key contaminants.
Tribal Drinking Water Systems	% of population in Indian country served by community water systems with drinking water that meets all applicable health-based drinking water standards.
Fine Particulate Air Pollution	% of low-income people living in counties with monitors measuring concentrations of PM2.5 that meet the 2012 annual and 2006 24-hour PM2.5 NAAQS.
Hazardous Waste Sites	Reduce human exposure to contamination at hazardous waste sites with overburdened vulnerable communities.

Tools and Guidance for Integrating Environmental Justice

- [*EJ Legal Tools Document*](#)
- [*EJSCREEN*](#)
- [*NEPA Analytic Methodologies for EJ*](#)
- Rulemaking
 - [*Rulemaking Guide 1*](#)
 - [*Rulemaking Guide 2*](#)
- [*Enforcement*](#)
- [*Permitting*](#)



Significant Documents and Resources on Cumulative Risks and Impacts



Cumulative Impacts & Community Vulnerabilities

Environmental Stressors

- Proximity/exposure to pollution
- Multiple sources of pollution
- Unique exposure pathways
- Physical infrastructure



Population Vulnerability

- Susceptible populations
- Socio-economic factors
- Capacity to participate in decision making

EJSCREEN

USEPA's nationally consistent EJ screening and mapping tool

Background

2010: EPA begins building nationally consistent EJ screening tool

2011: Commitment made in [Plan EJ 2014](#)

2011: National Environmental Justice Advisory Committee issued report on EJ screening methods

2012: Internal version released for EPA staff

2013: Peer reviewed by experts in 2013

2015: Interim version released to public

2016: Full version released to public



Nationally Consistent Environmental Justice Screening Approaches

MAY 2010

A Report of Advice and Recommendations
of the
National Environmental Justice Advisory Council
A Federal Advisory Committee to the U.S. Environmental Protection Agency

A Federal Advisory Committee to the U.S. Environmental Protection Agency

EJSCREEN

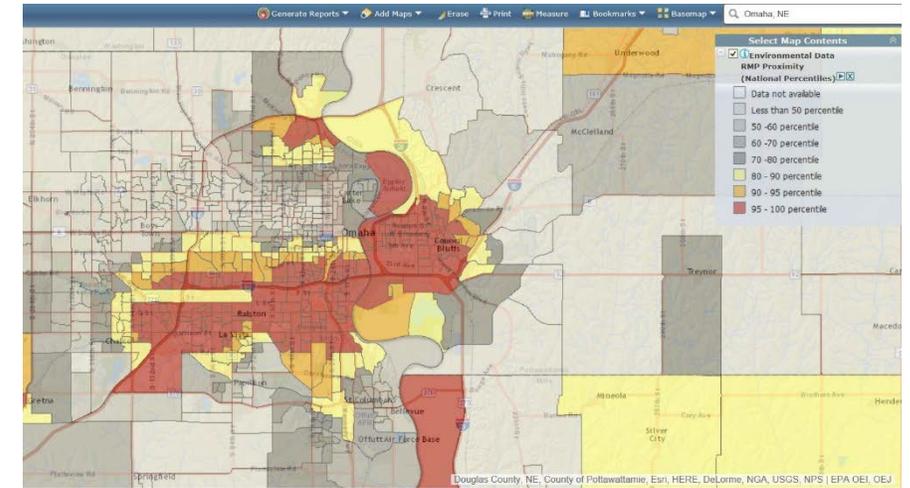
Features

- **Purpose:** Identify geographic areas meriting further review, outreach or analysis
- **EJ Indexes:** Combining environmental and demographic data for eleven environmental factors
- **High Resolution Data:** Census block groups as basic units of analysis
- **Accessible and Intuitive:** Web-based, interactive; standard printable reports, maps & bar graphs; importable data sets

Environmental Indicators	Demographic Indicators
<input type="checkbox"/> PM 2.5	<input type="checkbox"/> Low-Income
<input type="checkbox"/> Ozone	<input type="checkbox"/> Minority
<input type="checkbox"/> NATA Diesel PM	<input type="checkbox"/> Less than High School Education
<input type="checkbox"/> NATA Air Toxics Cancer Risk	<input type="checkbox"/> Linguistic Isolation
<input type="checkbox"/> NATA Respiratory Hazard Index	<input type="checkbox"/> Individuals under Age 5
<input type="checkbox"/> Lead Paint (pre-1960s Housing)	<input type="checkbox"/> Individuals over Age 64
<input type="checkbox"/> Traffic Proximity	
<input type="checkbox"/> Proximity-NPL Sites	
<input type="checkbox"/> Proximity-RMP Facilities	
<input type="checkbox"/> Proximity-TSD Facilities	
<input type="checkbox"/> Proximity-Major Water Dischargers	

New Developments in EJSCREEN

- Updated version released in July with improved features such as:
 - Updated environmental and demographic information
 - New water indicator
 - City boundaries
- Creating case studies to share information with the public of different uses of EJSCREEN
- Working with external partners to expand the use of EJSCREEN data
- Developing short training videos to make the tool more accessible to new users



EJSCREEN Training Videos:

- Overview of EJSCREEN
- Uses of EJSCREEN
- New Features of EJSCREEN 2016
- How to Interpret an EJSCREEN Standard Report

[EJSCREEN Videos](#)

C-FERST

Community Focus Environmental Risk Screening Tool: a community mapping, information access and assessment tool to inform environmental public health decisions

- Enhances access to information for community decision-making
- Provides venue for technical assistance, science communication, collaboration
- Assists with identification and prioritization of community environmental health issues
- Fosters sustainable and healthy communities
- Important part of ECOS/ASTHO/EPA Memorandum of Agreement on environmental and public health efforts

CARE Roadmap Steps
The Roadmap: Ten Steps to a Healthier Community and Environment

10 Steps of the CARE Roadmap

1 2 3 4 5 6 7 8 9 10

Step 2: Identify Community Concerns
"Identify the environmental, health, and related social and economic concerns of the community."

C-FERST Resources for this step:

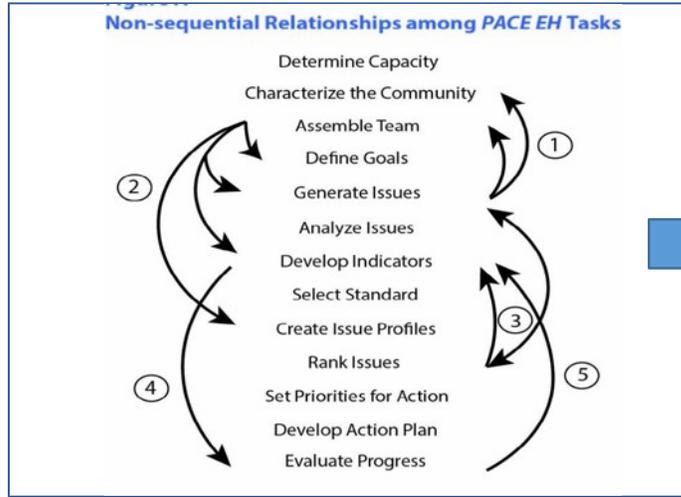
- [Maps](#)
C-FERST Maps contain environmental and social conditions that your community may be concerned about, such as sources and concentrations of pollution in the environment.
- [Community Data Table](#)
The Community Data Table has environmental and demographic information that you can compare at the county and state level.

Partnering with Communities in Developing C-FERST

	Portland, ME CARE pilot	Springfield, MA CARE pilot	Passamaquoddy Tribe (ME) pilot
Issues of Concern Identified by Communities	<ul style="list-style-type: none"> • outdoor air pollution • water quality • lead in soil, old homes • elevated BLL children • bike/pedestrian safety • waste/litter • brownfields • public housing conditions • exposure to common chemicals 	<ul style="list-style-type: none"> • ambient air quality • near roadway exposures • home & school IAQ • lead • health disparities • debris/waste/litter • abandoned homes/ brownfields • violence • tornado damage 	<ul style="list-style-type: none"> • solid waste management • sea level rise • heritage diet • softwood forestry change • invasive species • water quality: wetland s and drinking water • air pollution: indoor and ambient • ocean acidification • energy self-sufficiency • health outcomes
Local Data Collected	<ul style="list-style-type: none"> • turnpike traffic • ozone • green space • blight 	<ul style="list-style-type: none"> • school asthma rates • air pollution • water quality 	<ul style="list-style-type: none"> • solid waste data • ambient air monitoring

Major Features of C-FERST

Community Guides



Maps

Maps: Clean Air?
Where is the Diesel PM coming from?

Diesel PM Ambient Concentration:
1.49314 µg/m³
(all concentrations are in µg/m³)
Census Tract ID: 410
County: ME
State: ME
Population in Tract (2010): 9,621
Total Conc.: 1.49314
Point Conc.: 0.003471

The majority is from onroad sources. The community will want to take into consideration the increase in onroad sources from any proposed development.

Data Tables

Community Data Table

C-FERST Community Data Table

The CDI shows us that our community has higher levels of some air toxics than the county or state averages.

Let's learn about Diesel PM.

Issue Profiles

Issue Profiles: Diesel PM

C-FERST Issue Profile: Diesel Exhaust

Diesel exhaust is a mixture of gases and particulates emitted during combustion of diesel fuel in the engines of cars, trucks, boats, locomotives, marine vessels and heavy equipment.

The most common exposure pathway is inhalation of air containing diesel particulate matter. Based on human and laboratory studies, there is considerable evidence that diesel exhaust is a likely carcinogen.

Short term exposure to diesel exhaust may cause eye, nose, throat and lung irritation, neurological effects such as headaches, dizziness, and nausea. It can also irritate asthma. Long term exposure to diesel exhaust has resulted in lung cancer and neurological effects. Human epidemiological studies have shown an association between diesel exhaust exposure and increased lung cancer risk.

Learn more about diesel exhaust by exploring the links below.

Exposure and Risk Reduction Options

- Clean Diesel State Allocations
- Clean Diesel National Grants
- Verified Technologies for Squeaky and Clean Diesel
- Alaska Native Village Air Quality Fact Sheet: Diesel Fuel Use (PDF) - [View PDF](#)
- TRCA - Reducing Air Emissions Associated With Goods Movement: Working Towards Environmental Justice

By following these links, we can gather helpful information.

Strategies

Issue Profiles: Brownfields

Strategies Implemented by Other Communities

- Brownfields Grant Fact Sheet Search
- California Groundwater Cleanup Study for Northland District - Fact Sheet and Final Report
- Connecticut, New Haven City Government - Summary and New Haven's Green map
- Delaware, West Coast Environmental Indicators Project - Fact Sheet
- Florida, City of Gainesville, Florida - Final Report
- Implementing the Sustainable Communities Act: Brownfields Pilot Projects
- Brownfields Success Stories
- Brownfields State and Local Fact Sheet
- Agency for Toxic Substances and Disease Registry's Brownfields Remediation Success Stories
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Brownfields Success Stories

Brownfields Success Stories highlight the accomplishments of EPA Brownfields grantees across the country. These accomplishments include transforming brownfields into thriving new centers of commerce and industry, creating jobs through cleanup and reuse, fostering innovative partnerships among federal, state, and local governments and private-sector stakeholders such as developers and lenders, benefiting residents of brownfields communities for high wage environmental careers, and creating other examples of how brownfields remediation has positively impacted local economies and the quality of life for neighboring communities. Please note that the examples below are a sampling of Brownfields success stories. This list is not intended to be a full inventory of all Brownfields projects.

These success stories may be useful for this community!

Conclusions and Questions



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